

ABSTRACT OF THE DISCLOSURE

[0238] Nanotechnology methods for creating stoichiometric and non-stoichiometric substances with unusual combination of properties by lattice level composition engineering are described. The modified properties described include electrical conductivity, dielectric constant, dielectric strength, dielectric loss, polarization, permittivity, critical current, superconductivity, piezoelectricity, mean free path, curie temperature, critical magnetic field, permeability, coercive force, magnetostriction, magnetoresistance, hall coefficient, BHmax, critical temperature, melting point, boiling point, sublimation point, phase transformation condition, vapor pressure, anisotropy, adhesion, density, hardness, ductility, elasticity, porosity, strength, toughness, surface roughness, coefficient of thermal expansion, thermal conductivity, specific heat, latent heat, refractive index, absorptivity, emissivity, dispersivity, scattering, polarization, acidity, basicity, catalysis, reactivity, energy density, activation energy, free energy, entropy, frequency factor, bioactivity, biocompatibility, thermal coefficient of any property and pressure coefficient of any property.